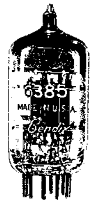
File Catalog: Special Purpose Electron Tubes
Section: Amplifier Tubes

**6385**
Bendix Red Bank Type TE-21
(Generic Type 5670)

# DOUBLE TRIODE




## RATINGS*

| | |
|---|---|
| Heater voltage—(AC or DC)** | 6.3 volts |
| Heater current | 0.50 amps. |
| Plate voltage—(max.) | 300 volts |
| Max. peak plate current (per plate) | 25 ma. |
| Max. plate dissipation (per plate) | 1.5 watts |
| Max. peak grid voltage | +0 volts<br>−100 volts |
| Max. heater-cathode voltage | 300 volts |
| Max. grid resistance | 1.0 megohm |
| Warm-up time | 45 sec. |

(Plate and heater voltage may be applied simultaneously)

* To obtain greatest life expectancy from tube, avoid designs where the tube is subject to all maximum ratings simultaneously.

** Voltage should not fluctuate more than ± 5%.

## PHYSICAL CHARACTERISTICS

| | |
|---|---|
| Base | Miniature button 9-pin |
| Bulb | T-6½ |
| Max. overall length | 2³⁄₁₆ in. |
| Max. seated height | 1¹⁵⁄₁₆ in. |
| Max. diameter | ⅞ in. |
| Mounting position | Any |
| Max. bulb temp. | 160°C |

## DESCRIPTION

This miniature nine-pin double triode is one of the Bendix Red Bank line of reliable vacuum tubes specifically designed for aircraft and industrial applications where freedom from early failure, long average service life, and uniform operating characteristics are extremely important. It is intended to replace the 2C51 or the 5670 in applications where reliability is the primary consideration. Each tube is given a 45-hour run-in under various overload, vibration, and shock conditions likely to be encountered in service. This run-in serves to reduce early failures by eliminating tubes with any minor defects that might lead to failure under actual operating conditions.

The use of a coil type heater inside an extruded alumina insulator gives a long life heater structure which stands up well under high heater to cathode voltage. The mount structure is so designed that the tube is capable of withstanding severe shock and vibration.

The tube is intended for use as an amplifier—to increase or control alternating voltages or power; as a mixer—to change electrical energy at one frequency to electrical energy at another frequency; or as an oscillator—to generate an alternating voltage. It can also be used in control equipment as part of a multivibrator or clamp circuit. When used as an oscillator, the upper limit of its frequency range is approximately 500 mc.

## AVERAGE ELECTRICAL CHARACTERISTICS

| | |
|---|---|
| Heater voltage, $E_f$ | 6.3 volts |
| Heater current, $I_f$ | 0.50 amps. |
| Plate voltage, $E_b$ | 150 volts |
| Grid voltage, $E_c$ | −2.0 volts |
| Plate current, $I_b$ | 8.0 ma. |
| Mutual conductance, $g_m$ | 5000 $\mu$mhos |
| Amplification factor, $\mu$ | 35 |
| Cut-off voltage | −10 volts |
| Direct interelectrode capacitances (no shield) | |
| Plate-grid (per section) | 1.7 $\mu\mu$f |
| Plate-cathode (per section) | 1.1 $\mu\mu$f |
| Grid-cathode (per section) | 2.4 $\mu\mu$f |
| Plate-plate | 0.1 $\mu\mu$f |

RED BANK DIVISION
BENDIX AVIATION CORPORATION
EATONTOWN, NEW JERSEY

Bendix Red Bank U.S.A.

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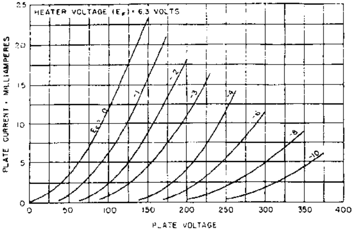
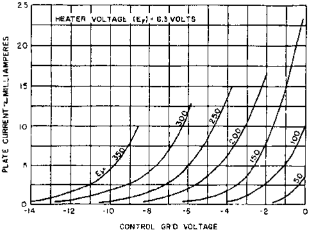
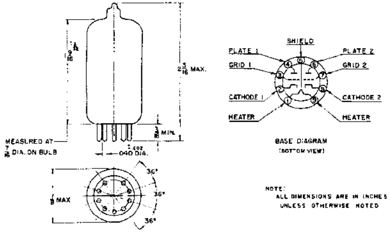



PLATE CHARACTERISTICS




TRANSFER CHARACTERISTICS




OUTLINE DRAWING